ENERGIZE KĀKOU

COMMUNITY WORKSHOP

HAWAIʻI STATE ENERGY OFFICE

Welina

Hawaiʻi is leading the way

We are proud of our collective vision

The first state to commit to 100% renewable energy

The first state to commit to the Paris Agreement

Hawaiʻi banned the use of coal for electricity generation

The first state to commit to a net-negative emissions goal

Hawaiʻi doubled its renewable energy **20%** in 2014

40% in 2022

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Workshop Purpose

Understand energy as a shared resource and how it connects to us, our communities, and our cost of living.

An opportunity to understand what is important to communities and to their vision for the future.

An opportunity to identify the features communities prefer in future renewable energy projects.

Community Engagement Process

How can community engagement honor and enhance relationships (the places, people, and past) to support more abundant communities now, and into the future?

1
Community leaders

March / April

One-on-one conversations to understand the community and map the network

"What do community residents want to know about energy?"

"What do we need to know about this community?"

2
Energy sector

April

Focus group discussions to identify what the energy sector needs from community

"What information does the energy sector need from community residents to better shape the energy system?"

3
Community residents

May

Public workshops to share key findings from previous phases and understand the communities energy priorities

"How can community and the energy sector collaborate to create more abundant and sustainable communities now and into the future?"

4
Reporting & Documentation

June

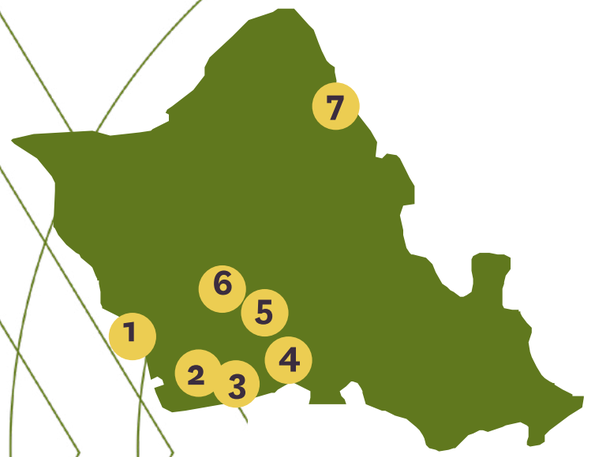
Playbook outlining best practices

Hawai'i Siting Report to capture community profiles

Community Engagement Report to capture information learned

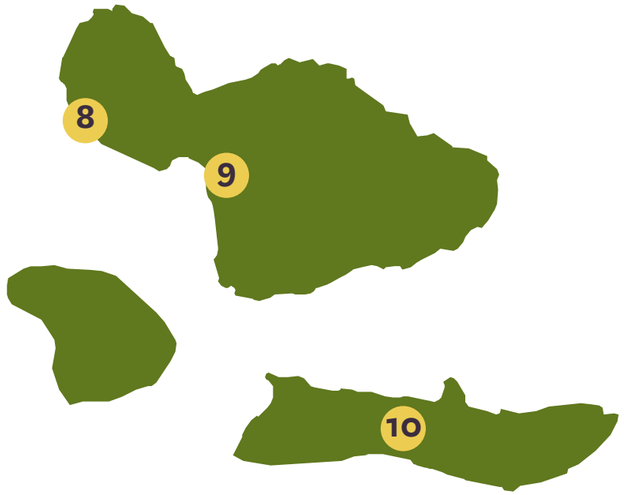
"How can the relationships activated continue? How can we honor participants by putting their feedback to use?"

Engaging Communities



O‘ahu County

1) Wai‘anae
2) Kapolei & Kalaeloa
3) ‘Ewa Beach
4) Pearl City
5) Waip‘io Village & Kunia
6) Mililani
7) Kahuku



Maui County

8) Lāhaina
9) Kīhei
10) Moloka‘i

Hawai‘i County

11) Pāhoa

Yesterday

Traditional Forms of Energy

E Kāne i ke ao

The energy of dawn

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Traditional Forms of Energy

Hina ʻai a ka mālama
The energy of the moon

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Traditional Forms of Energy

E Kāne i ka pahū wai nui

The energy of a great water source

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Traditional Forms of Energy

Hū ka pele
The energy of eruption

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Traditional Forms of Energy

Lono i ka makahiki

The energy of clouds that bring

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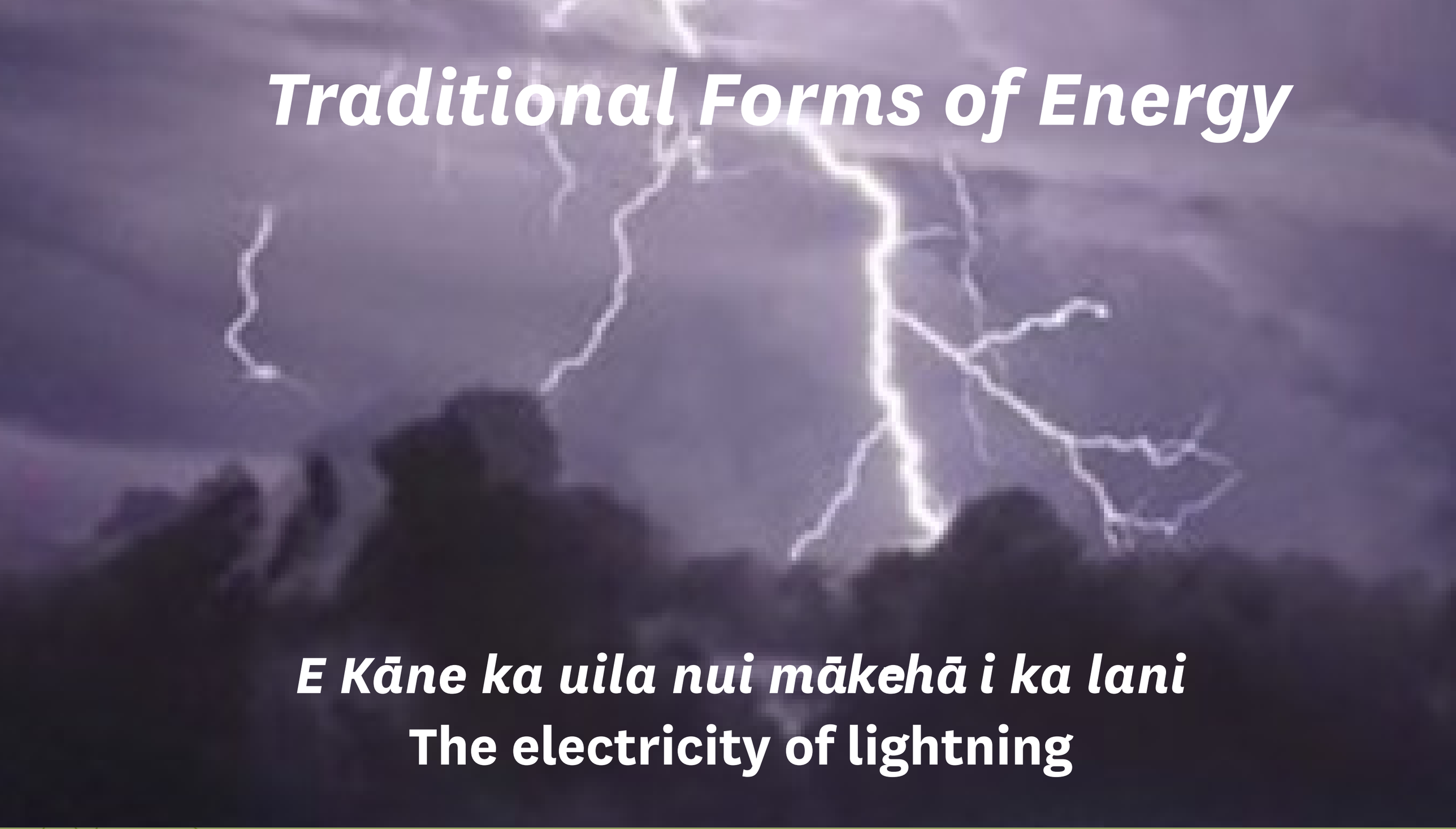
Traditional Forms of Energy



E Kāne ka uila nui mākehā i ka lani

The electricity of lightning

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Traditional Forms of Energy

E Kāne i ka makani nui
The energy of great winds

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Today

Kahului Power Plant
(closing 2024 – 2027)

Kalaeloa Power Plant
(closing Sept 2022)

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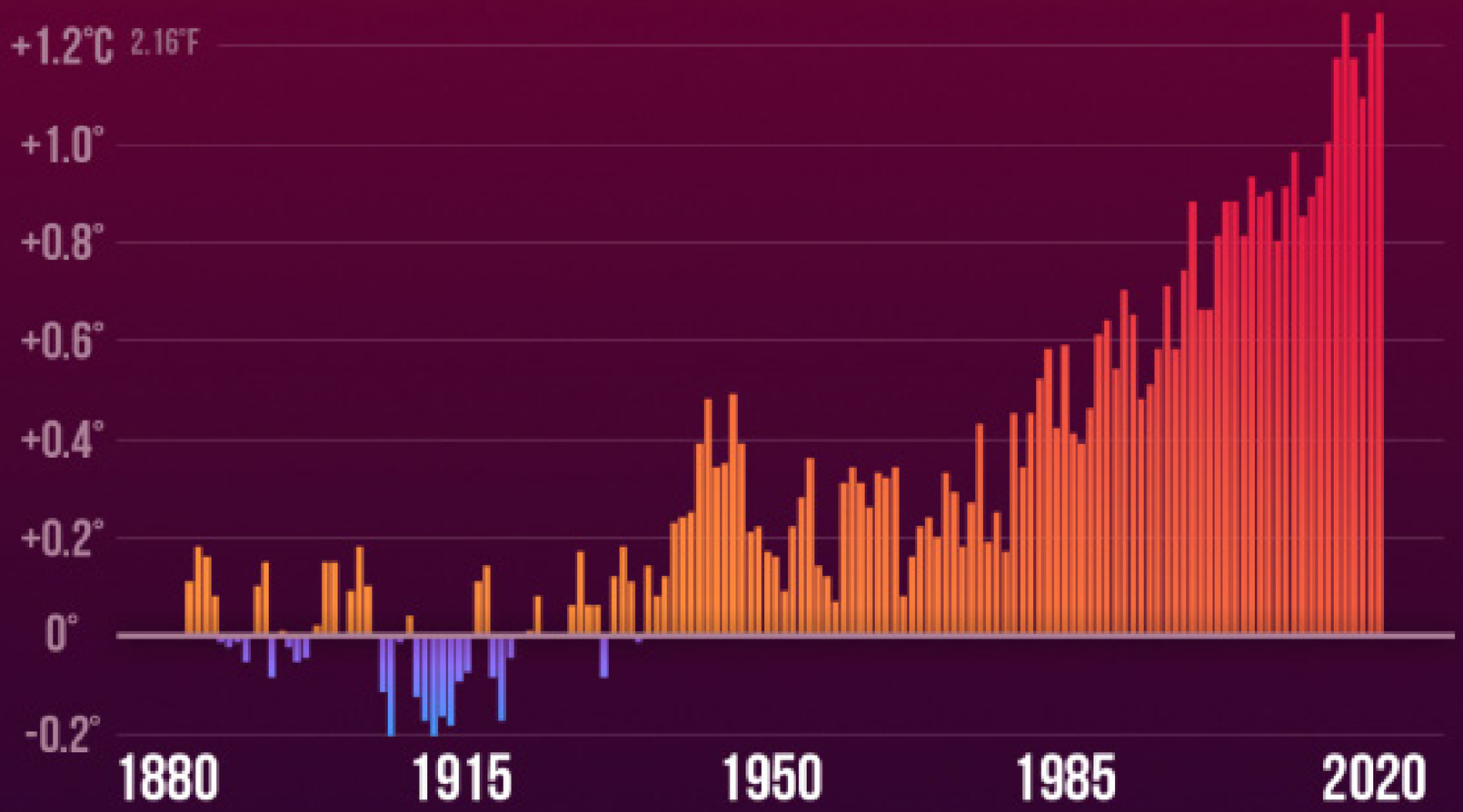
GLOBAL TEMPERATURE

DEPARTURE FROM 1881-1910 AVERAGE



Source: NASA GISS & NOAA NCEI global temperature anomalies averaged and adjusted to early industrial baseline (1881-1910). Data as of 1/14/2021.

CLIMATE CENTRAL

Coral Bleaching + Ocean Acidification

⬇

Threatens coral reefs, Food supply

Sea Level Rise

⬇

Shoreline erosion

Climate change across our pae ʻāina

Extreme Weather

⬇

Flooding in our communities

Rising Temperatures + Extreme Drought

⬇

Wildfires

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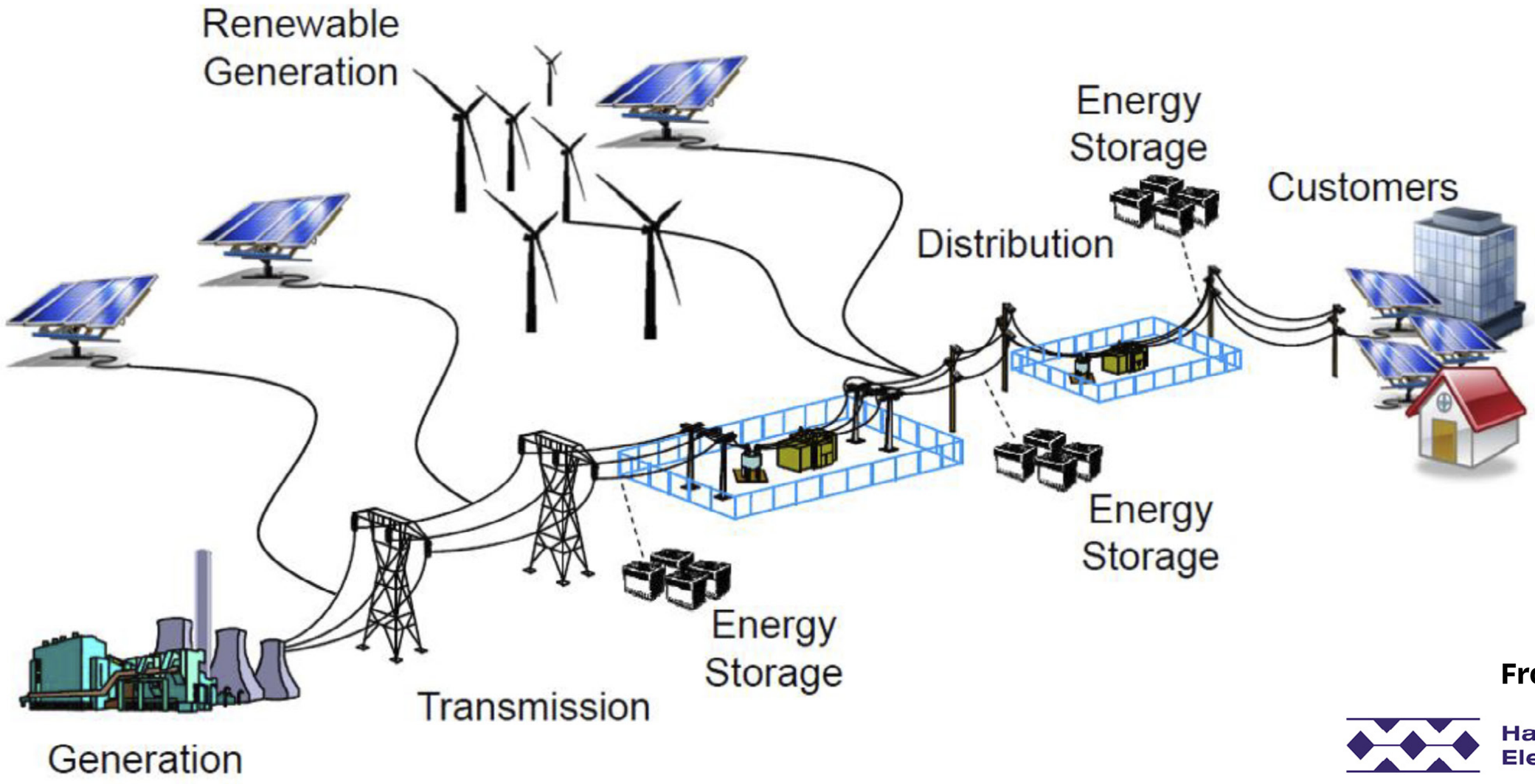
Energy Supply & The Grid

Where does my electricity come from?

Electric Grid Overview



From:

Hawaiian Electric

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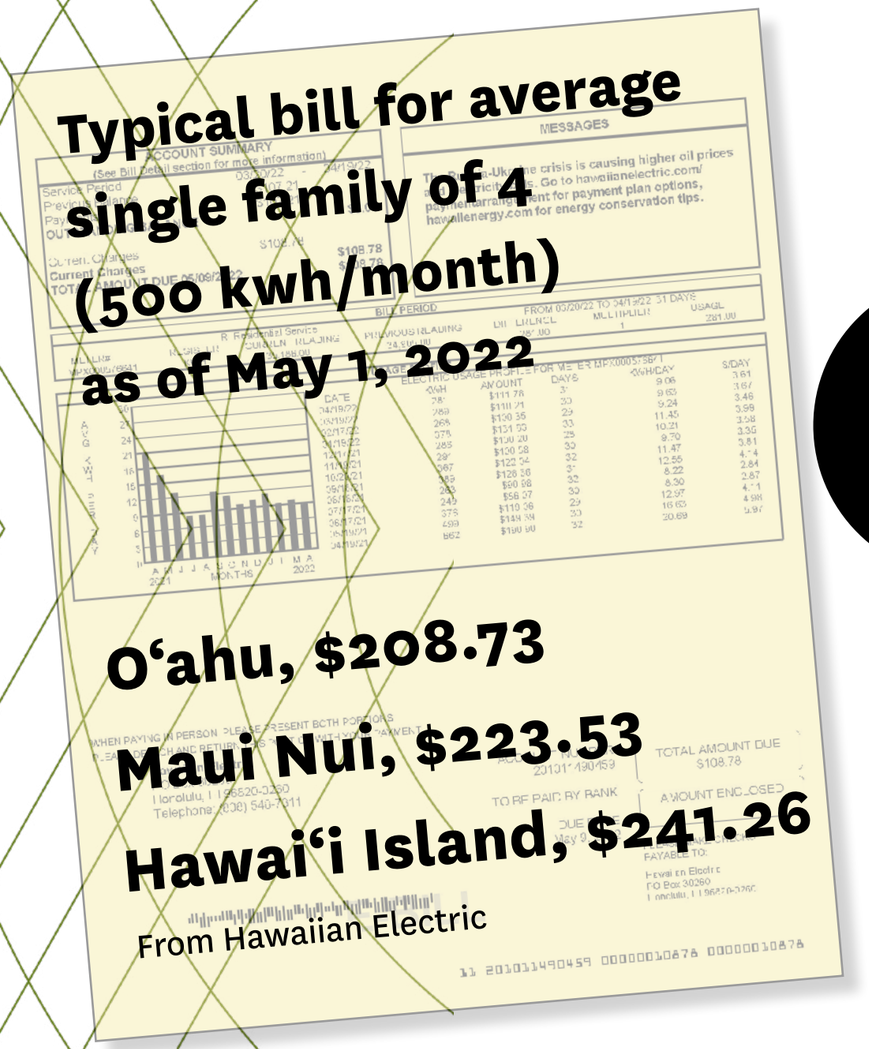

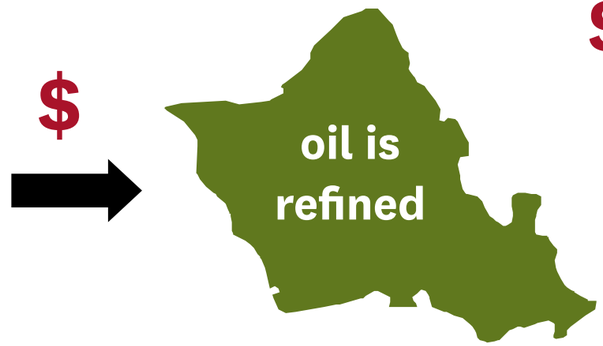

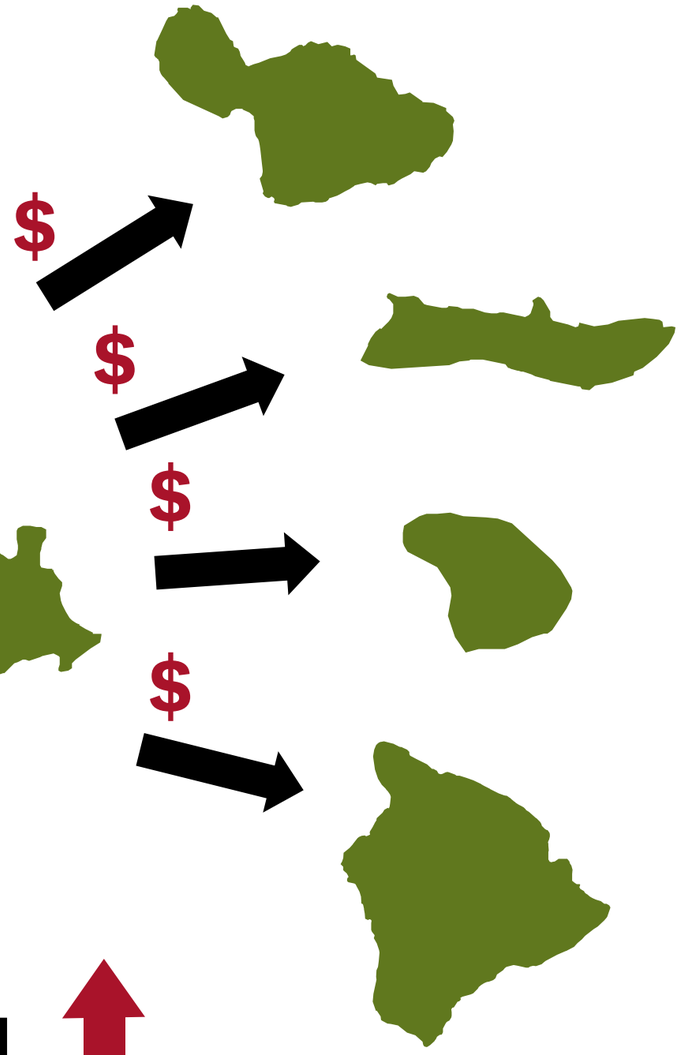

Price of oil ↑

Electricity bill costs ↑

Reliable, consistent and secure electricity service requires constant monitoring of the grid to ensure electricity generated and electricity used are in balance at all times.

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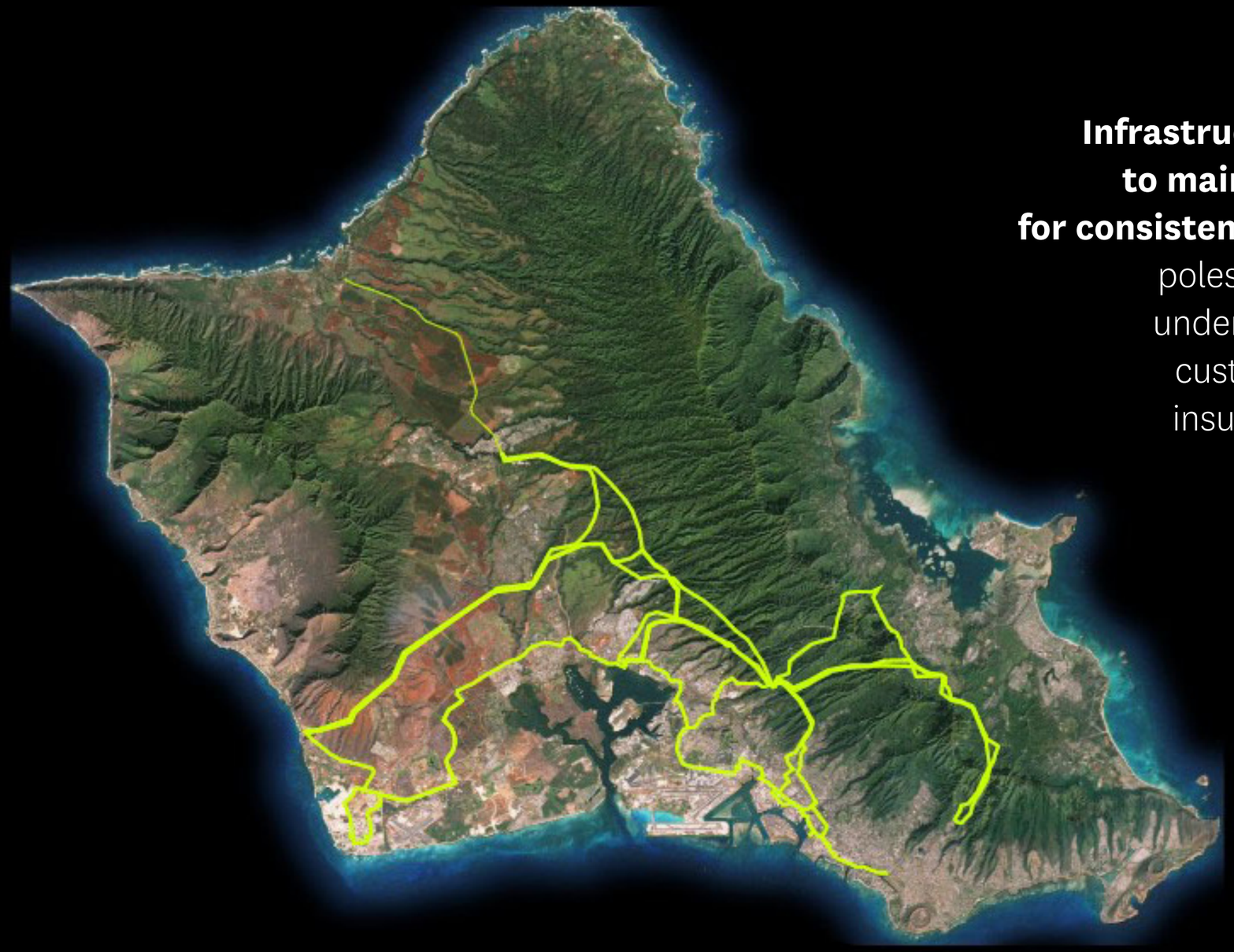
Oʻahu Transmission Lines



Infrastructure + employees
to maintain electricity
for consistent and reliable service:
poles, lines, meters,
underground cables,
customer service,
insurance, liability

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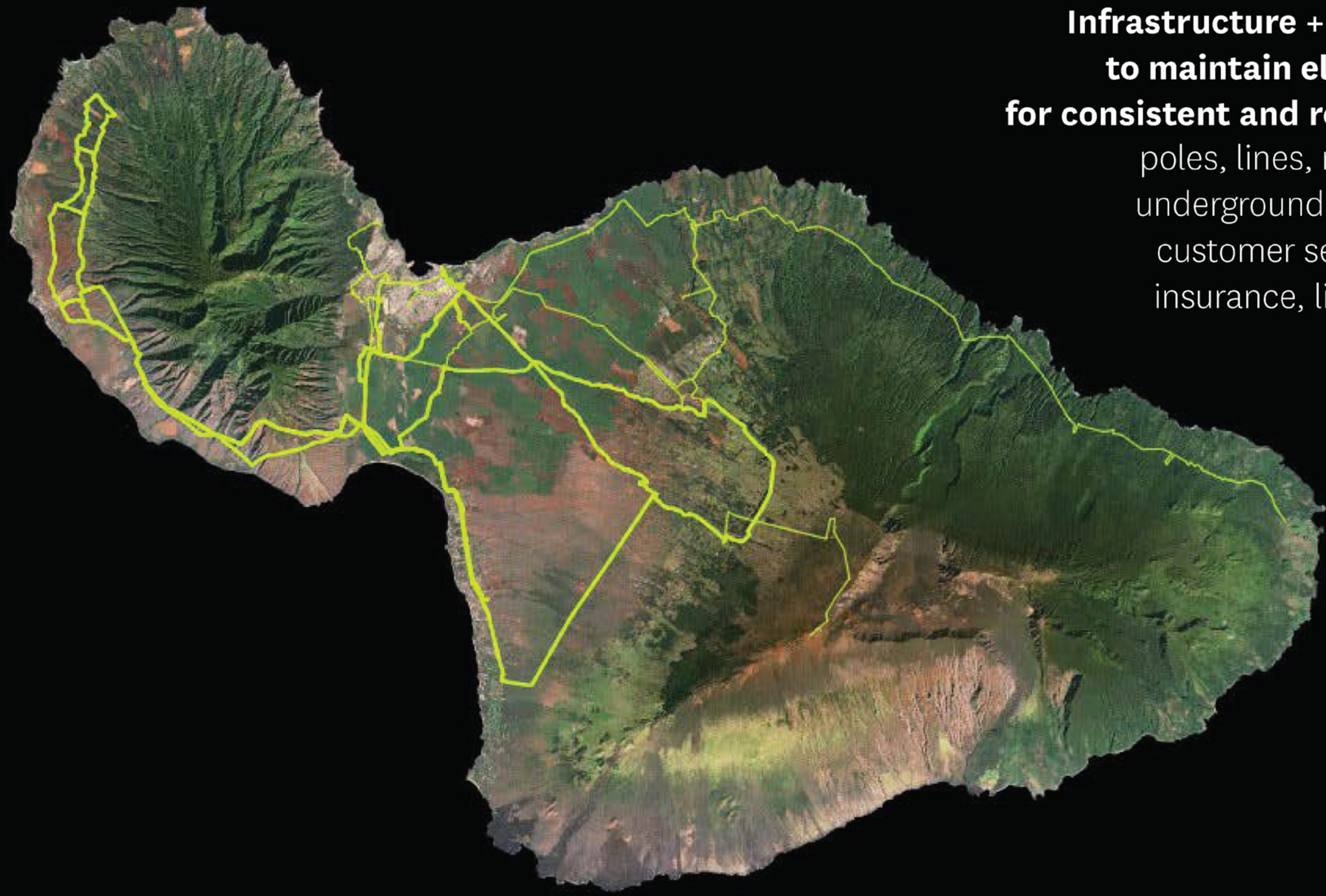
Maui Transmission Lines



Infrastructure + employees
to maintain electricity
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poles, lines, meters,
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Hawai‘i Island’s Transmission Lines

Infrastructure + employees
to maintain electricity
for consistent and reliable service:
poles, lines, meters,
underground cables,
customer service,
insurance, liability

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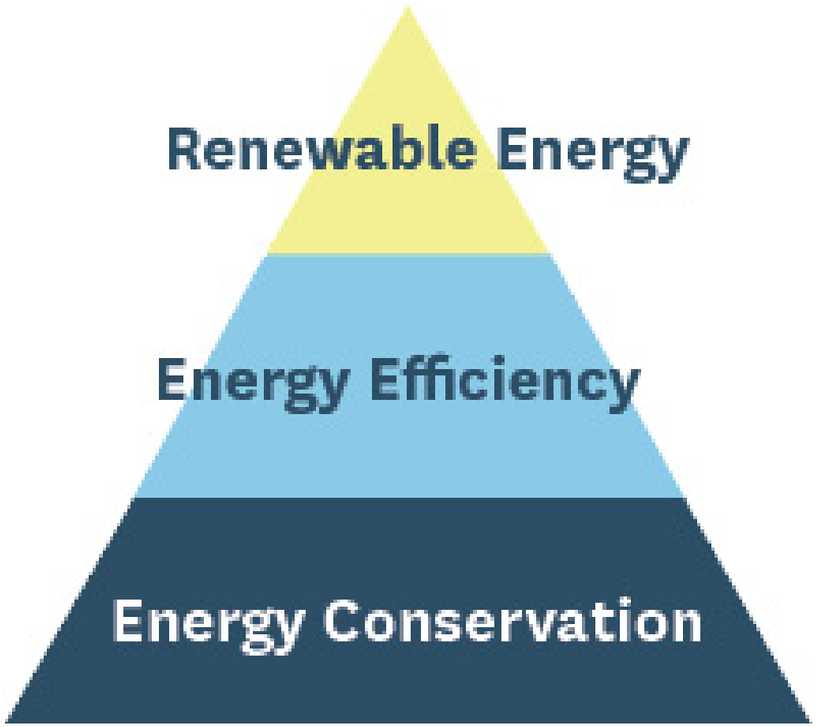
Hierarchy of needs for Hawai‘i to transition to 100% clean energy economy



The remaining energy that we need **comes from renewable sources**

Tools/appliances that use less energy to do the same tasks

Changing habits to use less energy

Energy Conservation

A mindset

of using less electricity

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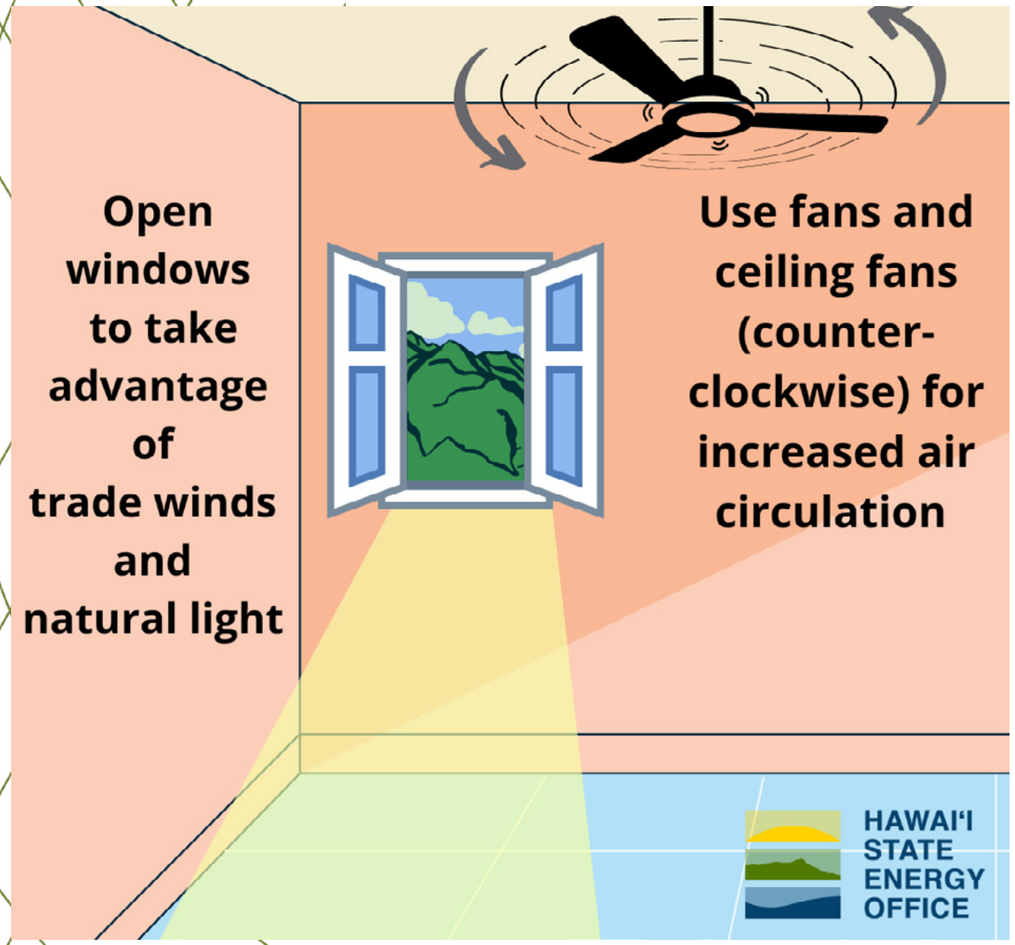
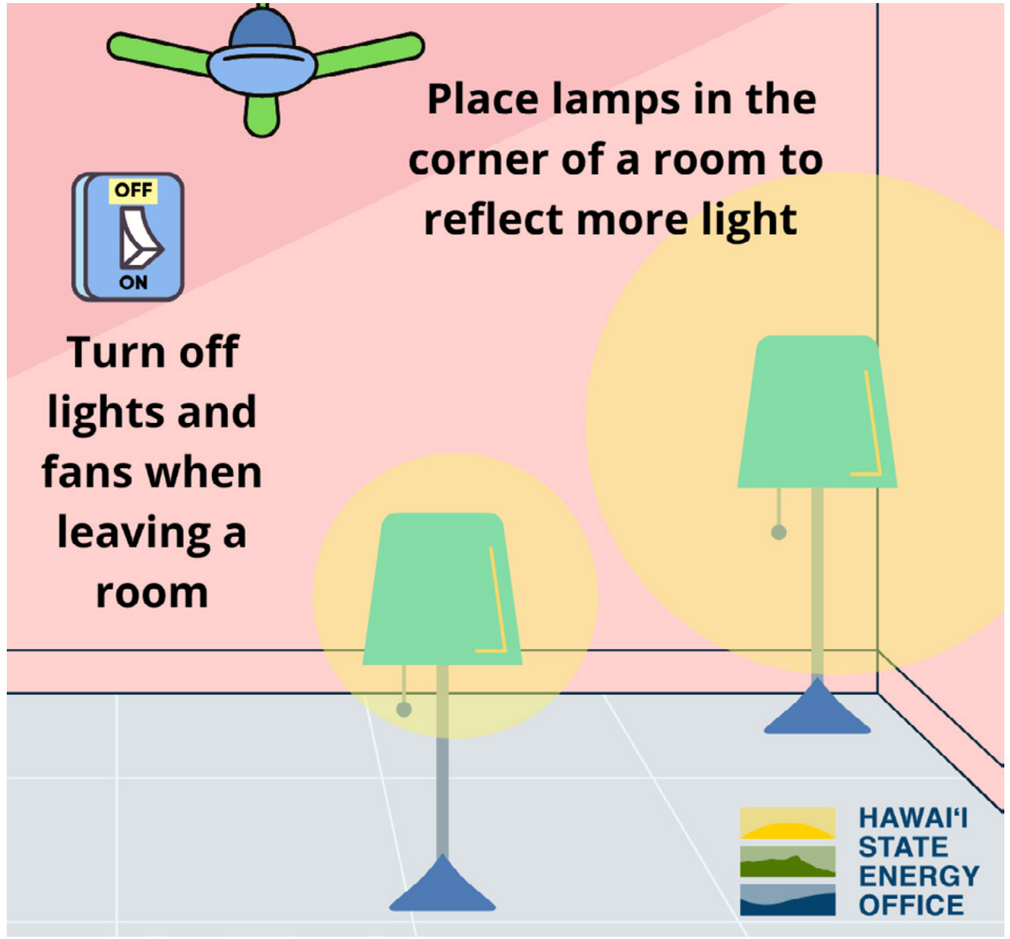
Energy Conservation Tips

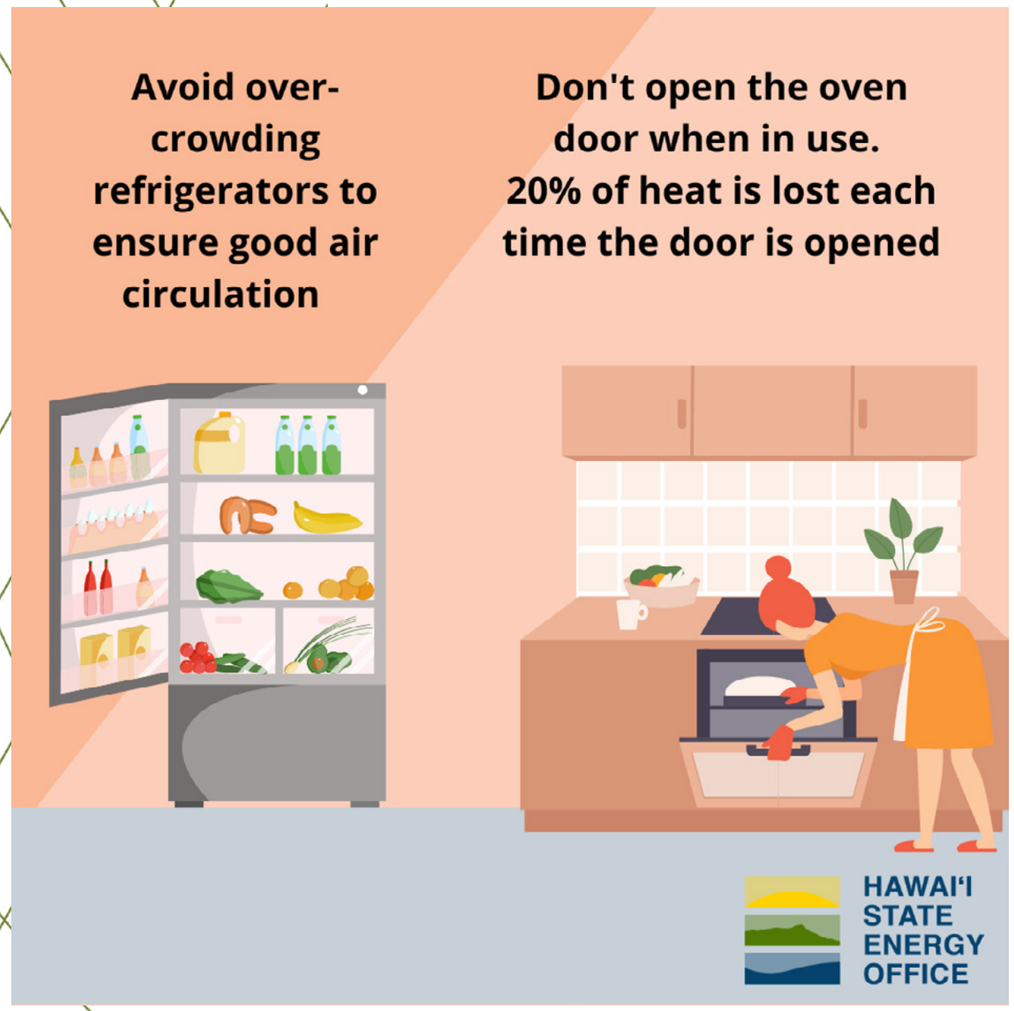
@EnergyHawaiiGov





Energy Conservation Tips

@EnergyHawaiiGov



Clean the dryer's lint filter before each load

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Energy Efficiency

The tools and appliances to use less energy,
& deliver savings on our electric bill

LED Lightbulb

SAVE $10/year
EVERY YEAR

Energy Star® Refrigerator

SAVE $200/year
EVERY YEAR

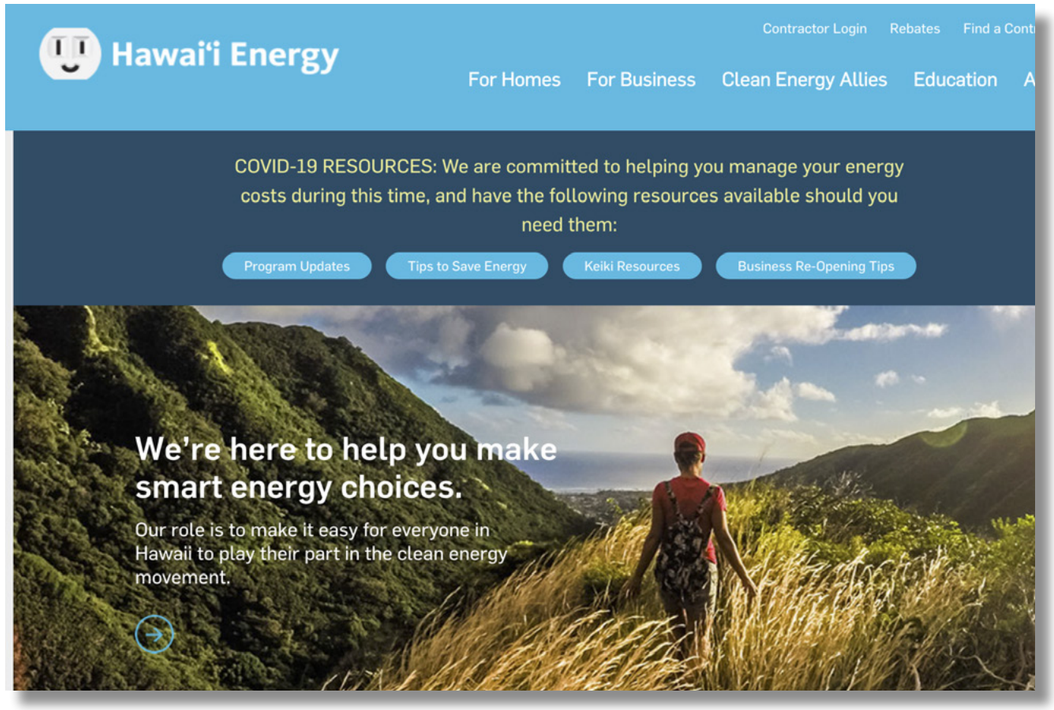
Solar water heater & heat pump water heater with smart device

SAVE $600/year
EVERY YEAR
(+ $3 bill credit/month if using device that shifts demand)

HawaiiEnergy.com

for training, advice, energy audits, rebates and low-cost supplies to save energy and money

@myHawaiiEnergy

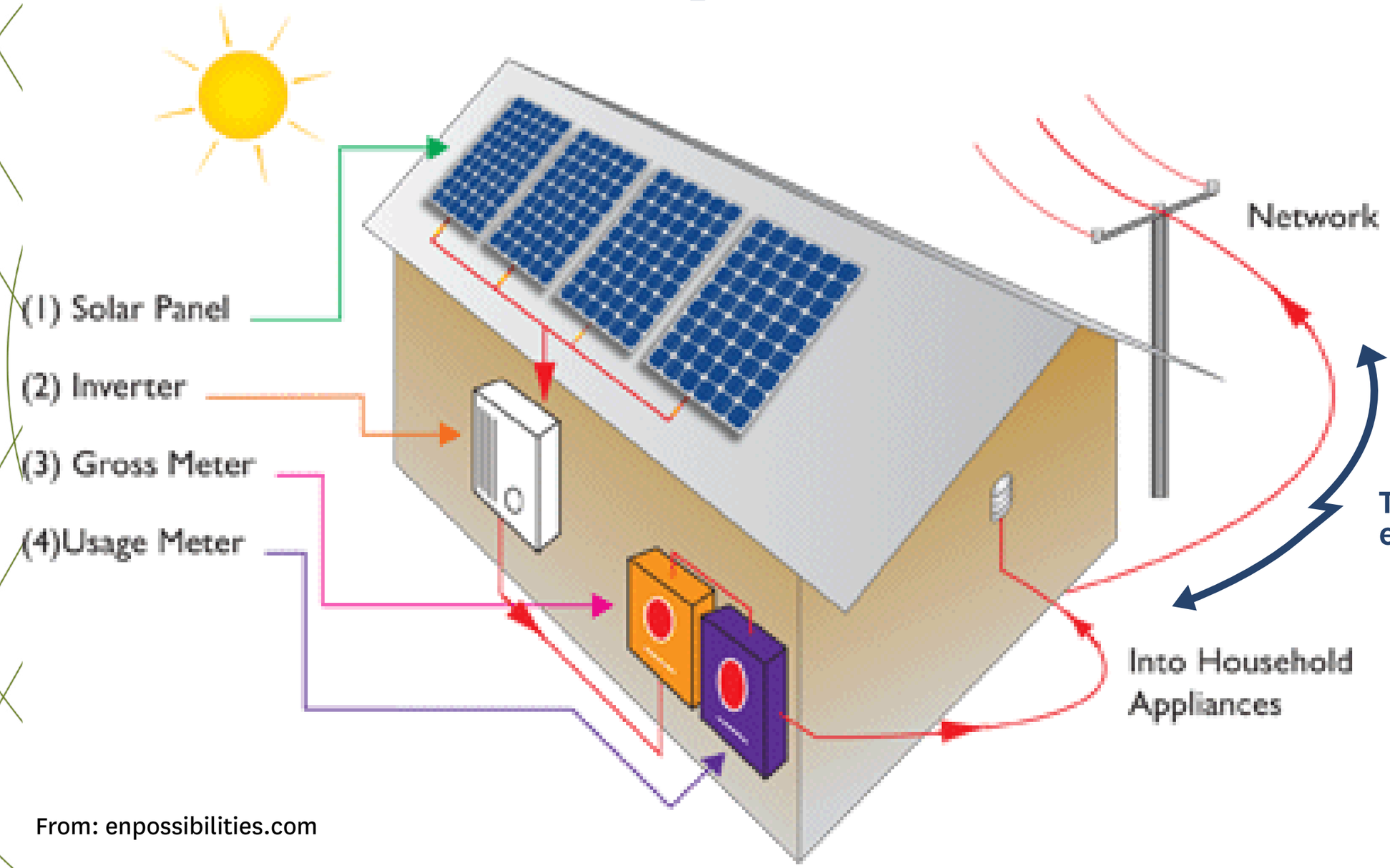


Renewable Energy

"You know, the world already knows that oil is not the solution and it's harmful to our climate, to the environment. So different ways we can draw upon more natural energy just makes good sense."

— Barbara, Molokaʻi

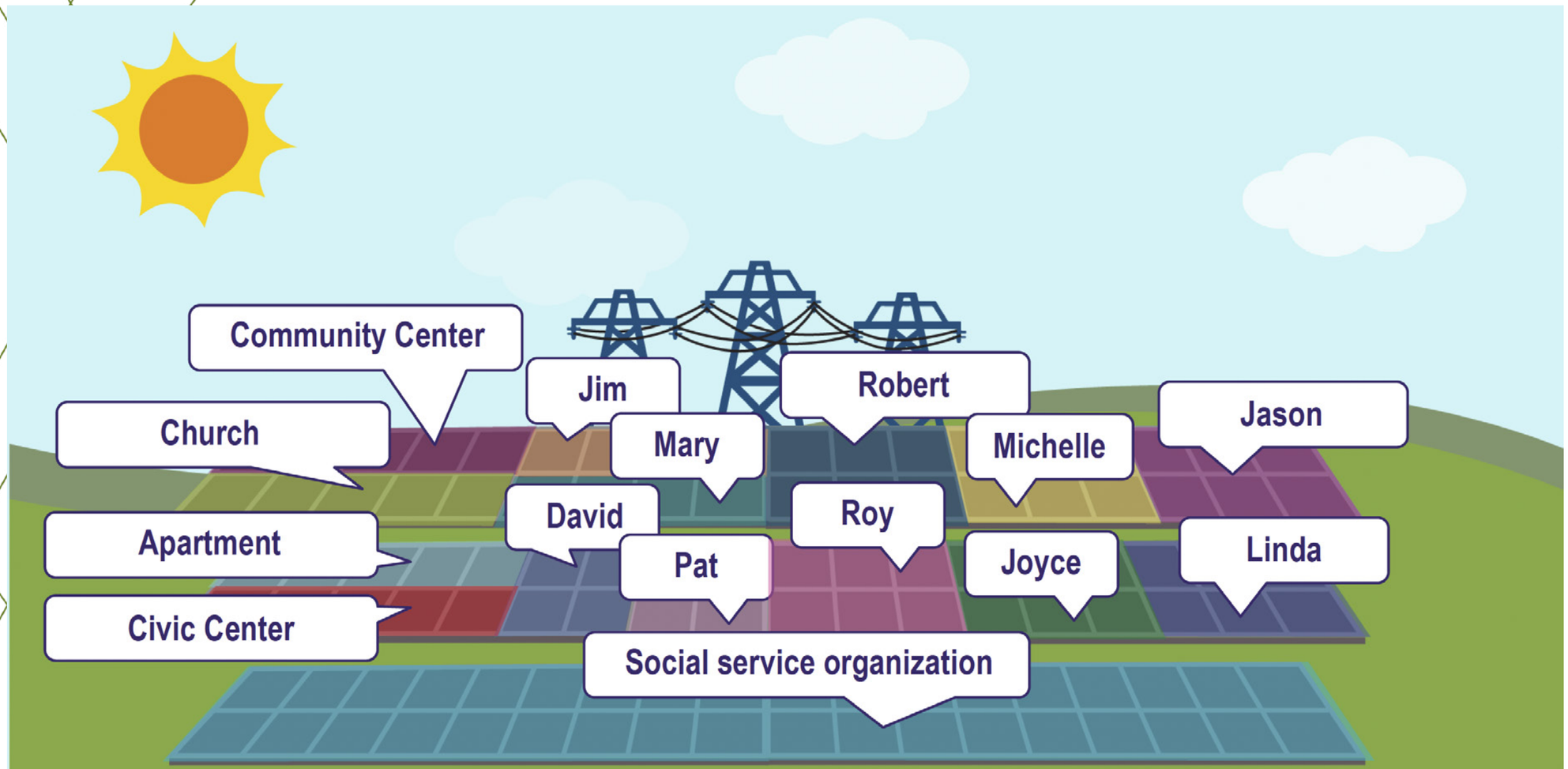
Rooftop Solar



From: enpossibilities.com

Community Solar

(CBRE — “Community-Based Renewable Energy”)



From Hawaiian Electric

Current and Upcoming Statewide CBRE Projects

For a list of statewide CBRE projects,
visit these online sites for project details and status

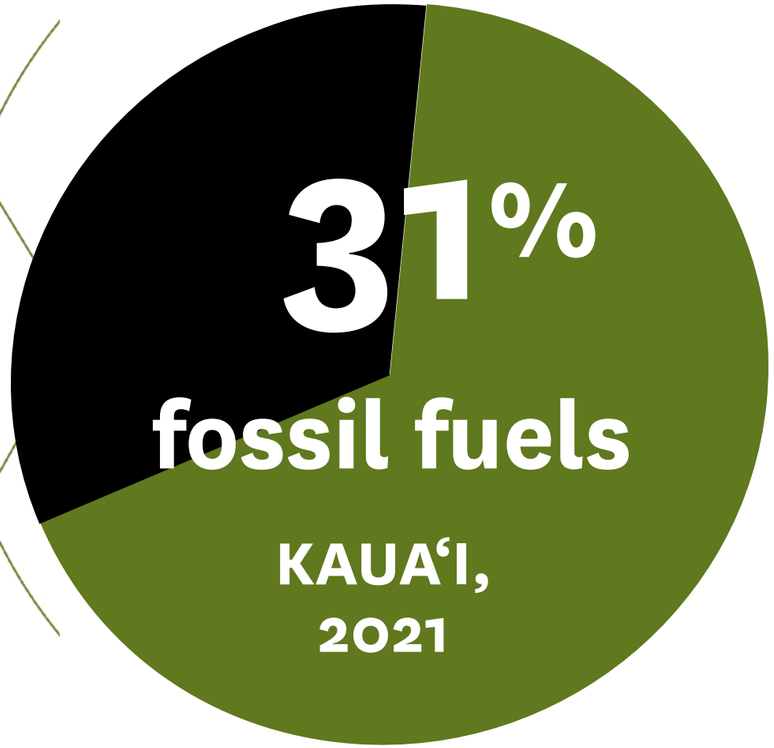
- HSEO's Project Directory

  https://energy.hawaii.gov/developer-investor/hawaii-energy-projects-directory

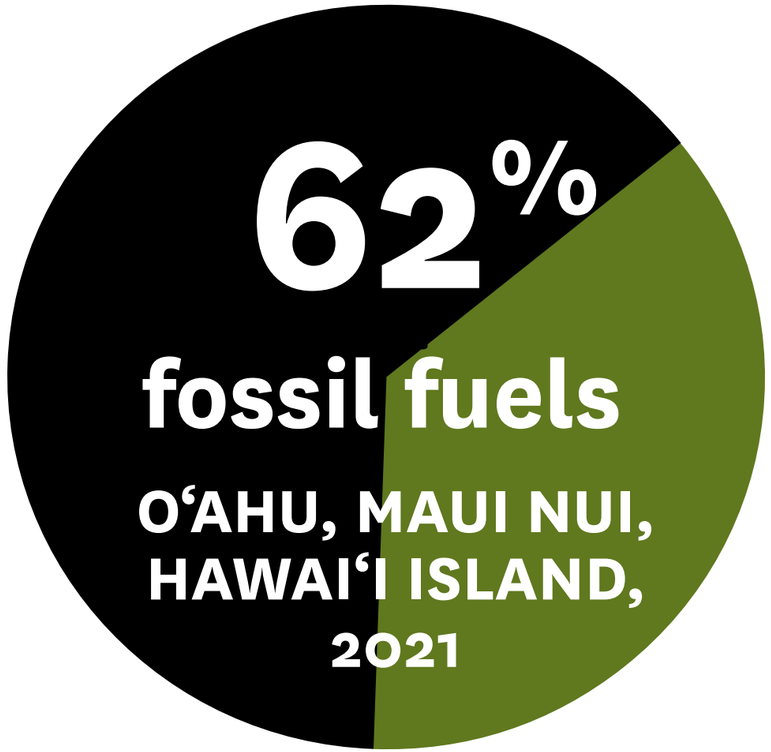
- Hawaiian Electric

  https://communityenergyhawaii.com/ViewProjects

Renewable electricity has the potential to stablilize our energy costs



From KIUC



From Hawaiian Electric

Kauaʻi residents' KIUC *electric bills have not risen in recent weeks compared with* Hawaiian Electric *residents' bills on other islands.*

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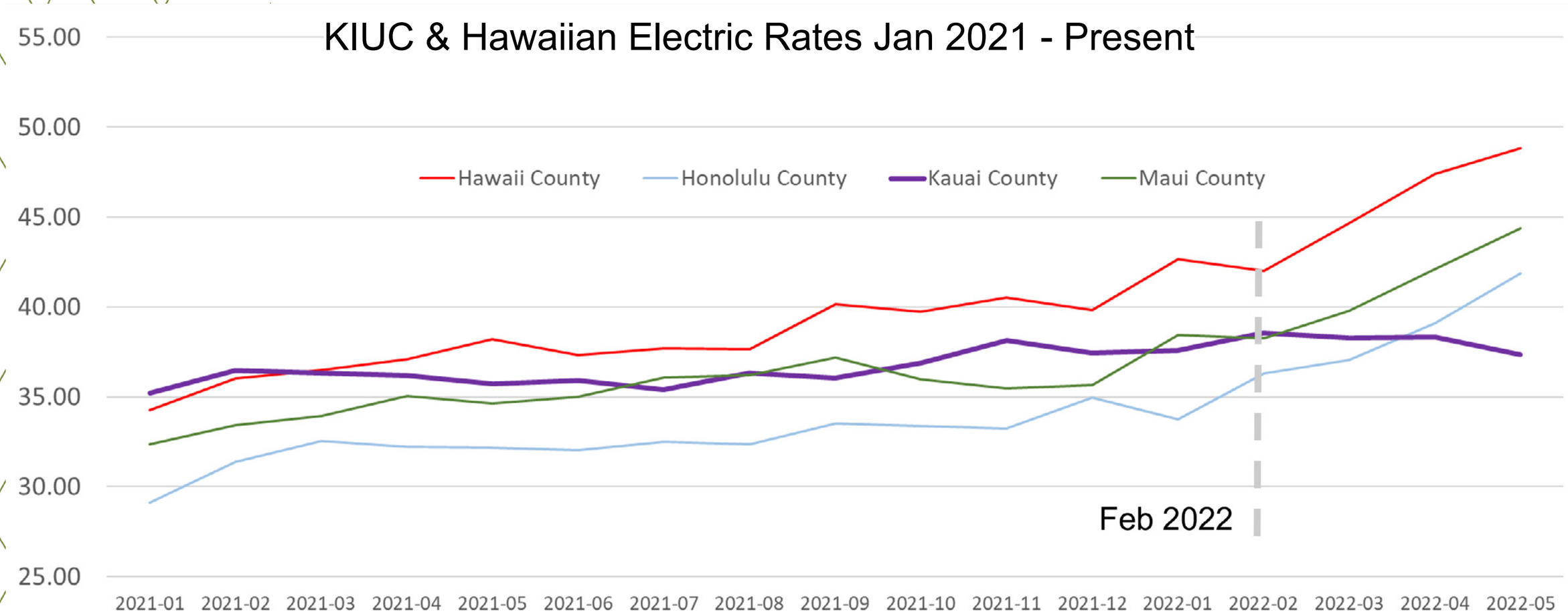
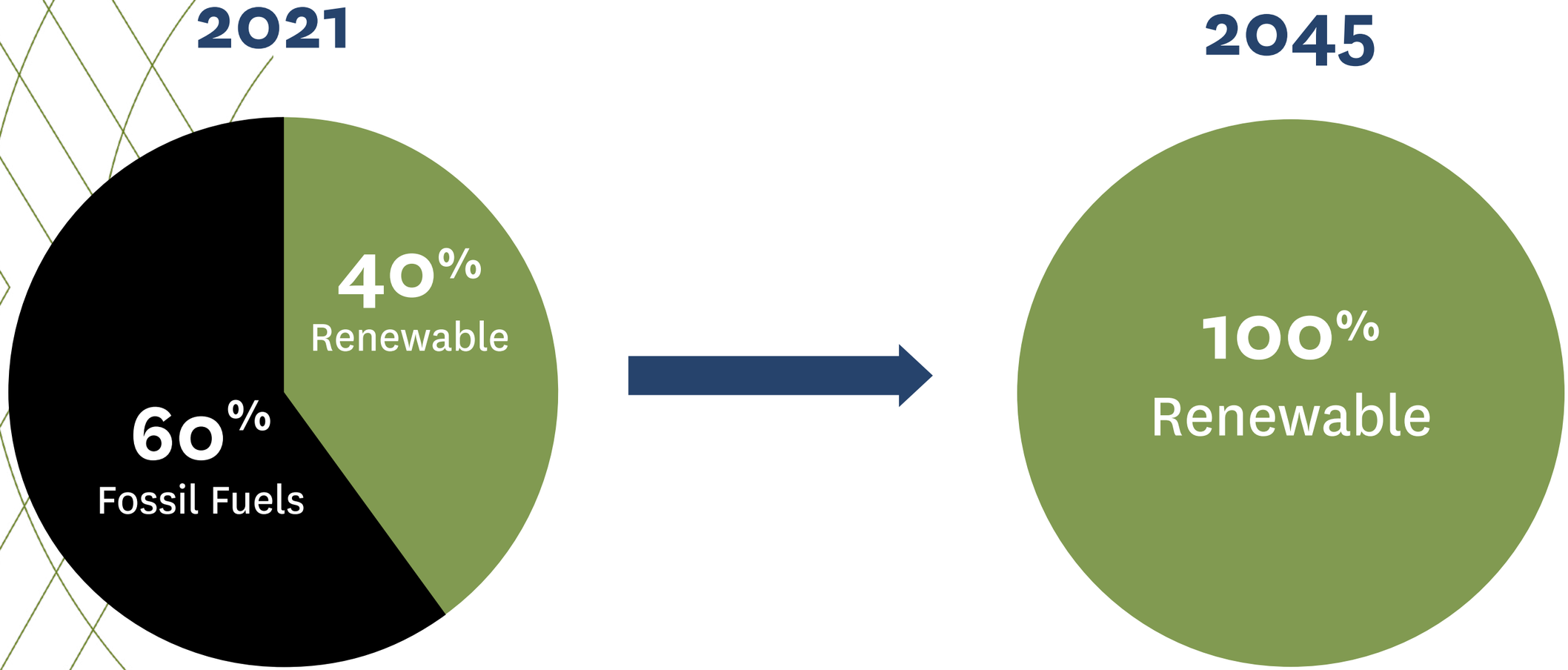
Why Renewable Electricity?
To Stabilize & Reduce Energy Costs



Renewable Electricity



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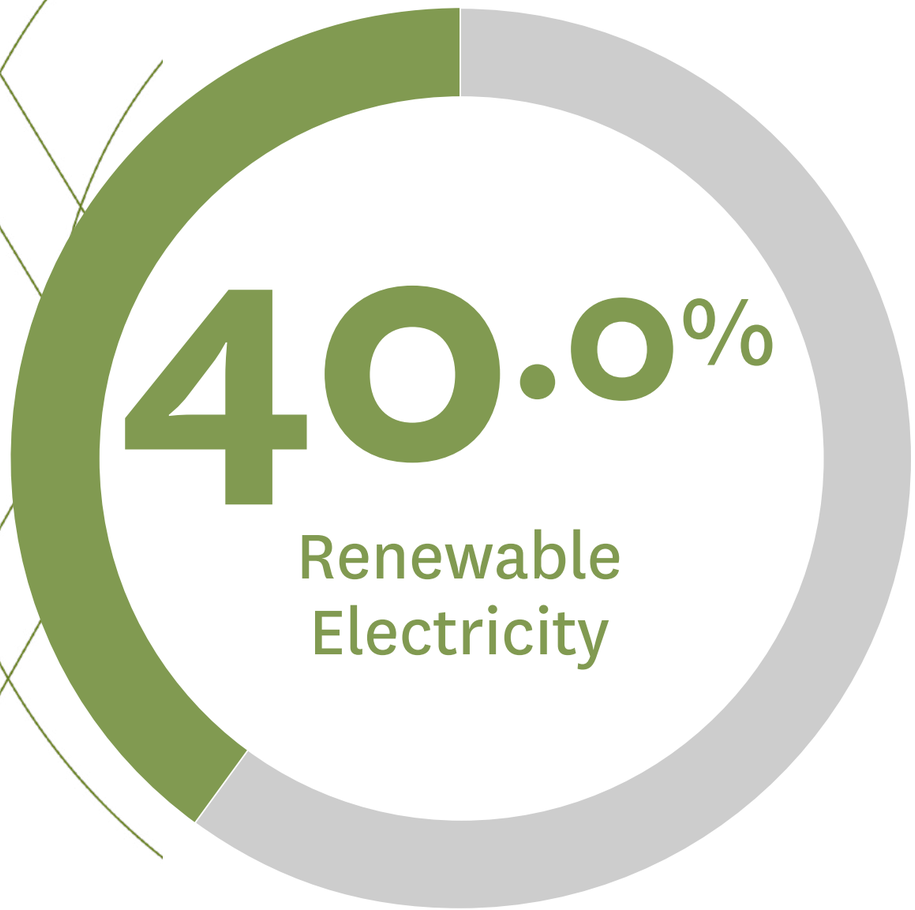
Statewide Renewable Electricity 2021



- 17.0% Distributed PV
- 8.1% Wind
- 6.0% Grid-Scale PV
- 4.7% Biomass
- 2.1% Geothermal
- 1.2% Hydro
- 0.8% Biofuel

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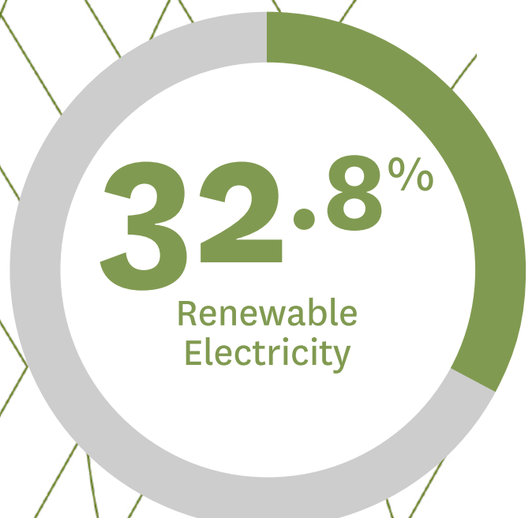
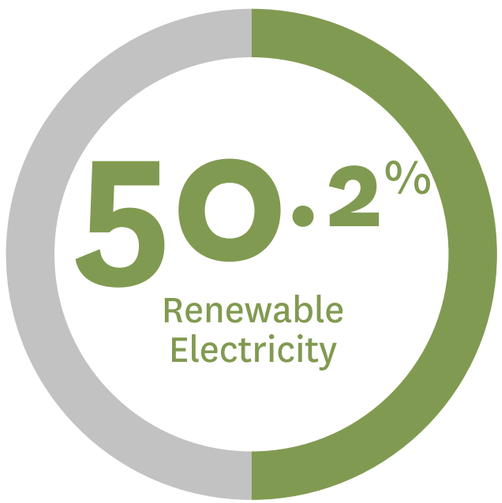
County Renewable Electricity Portfolio

O‘AHU



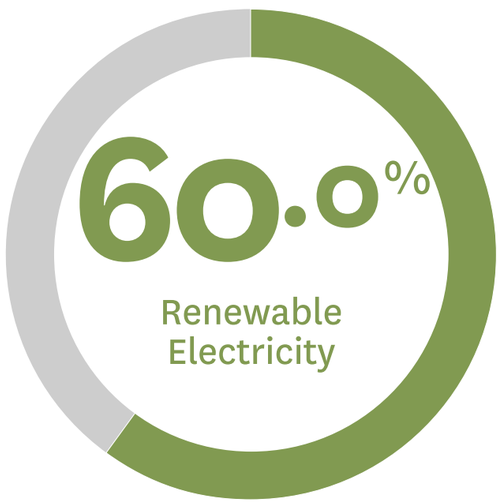
- 16.0% Distributed PV
- 6.0% Grid-Scale PV
- 5.9% Biomass
- 4.4% Wind
- 0.4% Biofuel

MAUI NUI



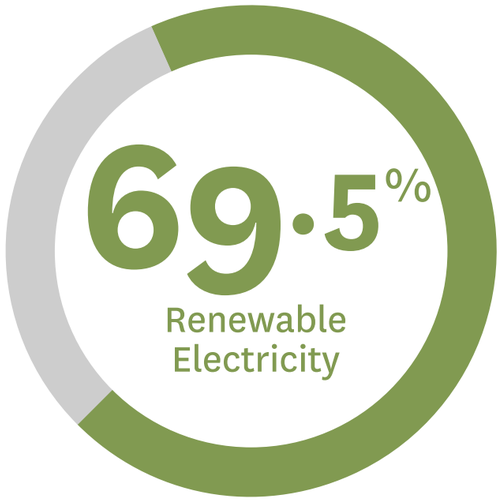
- 26.0% Wind
- 22.8% Distributed PV
- 1.4% Grid-Scale PV
- 0.1% Biofuel

HAWAI‘I



- 18.6% Distributed PV
- 17.6% Geothermal
- 14.8% Wind
- 4.5% Biofuel
- 4.1% Hydro
- 0.4% Grid-Scale PV

KAUA‘I



- 30.2% Grid-Scale PV
- 14.6% Distributed PV
- 14.1% Hydro
- 10.6% Biomass

Getting to 100% Renewable Electricity

- Energy conservation
- Energy efficiency
- Rooftop solar
- Grid-scale renewable energy projects
    - Community-based renewable projects
    - Solar
    - Geothermal
    - Hydroelectric
    - Wind
    - OTEC (Ocean Thermal Energy Conversion)
    - Wave
    - Waste
    - Bioenergy

-Transportation
    - Demand reduction
    - Electrification
    - Alternative fuels

-Hydrogen

-Alternative fuels/biomass

-Energy Storage

100%
Renewable Energy

2045

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Tomorrow

“Energy planning is a 21st century kuleana.”

— Leilani, Molokaʻi

Key Project Development Entities

Utilities

Generate and distribute electricity

Issue Requests for Proposals (RFPs)

Negotiate Power Purchase Agreements (PPAs)

Developers

Propose projects

Plan and permit Projects

Build, operate and decommission projects

Regulatory Agencies

Recommend policies

Review RFPs and PPAs

Review permit applications

How was my community chosen for a grid-scale renewable energy project, and how can I participate in the process?

1

HAWAIIAN ELECTRIC PUTS OUT A REQUEST FOR PROPOSALS

SIZE

"It should be _____ size"

(example: generate 5 MWh a day)

REGION

"It should be in _____ region" because of where the transmission line can handle more load

(example: West Hawai‘i Island)

2 ENERGY DEVELOPERS FIND A PIECE OF LAND THAT:

— ***landowner is willing to lease or sell***
— ***impacts the environment and culture minimally***
— ***syncs with elements of nature***
— ***suits the method*** *(solar prefers flat land)*
— ***nears a transmission line***
— ***costs the least***

Land Possibilities for an Energy Project

RESTRICTED

Conservation land

Certain high quality agricultural land

POSSIBLE

Government land

Industrial/Commercial zoned land

Low quality agricultural land

Residential

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Community Kuleana

Photo by Mark Holladay Lee/Ka Wai Ola

"Anybody who comes to Kahuku and looks at these turbines are appalled at the size, the sheer height and the close proximity that these turbines are to our children's schools, and homes. It's too big, and too close....Na Pua Makani is a prime example of the wrong way to develop renewable energy projects."

—Sunny, Kahuku

Understanding the Energy Project Timeline

1 RFP Development Process

- PUC receives draft RFP from Utility
- PUC & stakeholders comment on RFP
- Utility receives comments & redrafts RFP
- PUC approves RFP process

2 Bid

- Utility releases RFP
- Energy Developer submits proposal
- Utility selects project

3 Award

- Utility awards project
- Contract Negotiations
- Energy Developer formalizes community engagement

4 Approval

- Utility submits Draft PPA to PUC
- PUC opens public docket for public comments
- Utility submits revised PPA
- PUC approves PPA

5 Permitting

- Permitting process

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Community Voice Makes Change

1 RFP Development Process

PUC receives draft RFP from Utility	**PUC & stakeholders comment on RFP**	Utility receives comments & redrafts RFP	PUC approves RFP process

Communites say “PAUSE”

2021, Molokaʻi is granted time to develop their own community-driven Energy Plan to determine solutions best for their community

2021, Waiʻanae & Hawaiʻi island make recommendations to RFP that result in an approved RFP that better aligns with their community values

Community Feedback

Higher scoring to projects that are proposed on land zoned commercial or industrial, land with greater impervious cover, or reclaimed land.

Procedural improvements made to further ensure the protection and preservation of cultural resources.

Prioritizing local labor and prevailing wage incorporated in the RFP.

Additional requirements for developers to provide monthly updates to the community prior to and throughout the construction process.

(Non-Shared Solar Projects) Requirement for community benefits packages to address critical needs in host communities.

(CBRE Projects) Priority access to subscriptions will be offered to residents who live in the same census tract as a project, or any census tract that is adjacent to any census tract where the project is located.

Community Voice Was Heard:

Energy projects that engage the community during early project planning and design will be given extra points in the selection process

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5 Permits

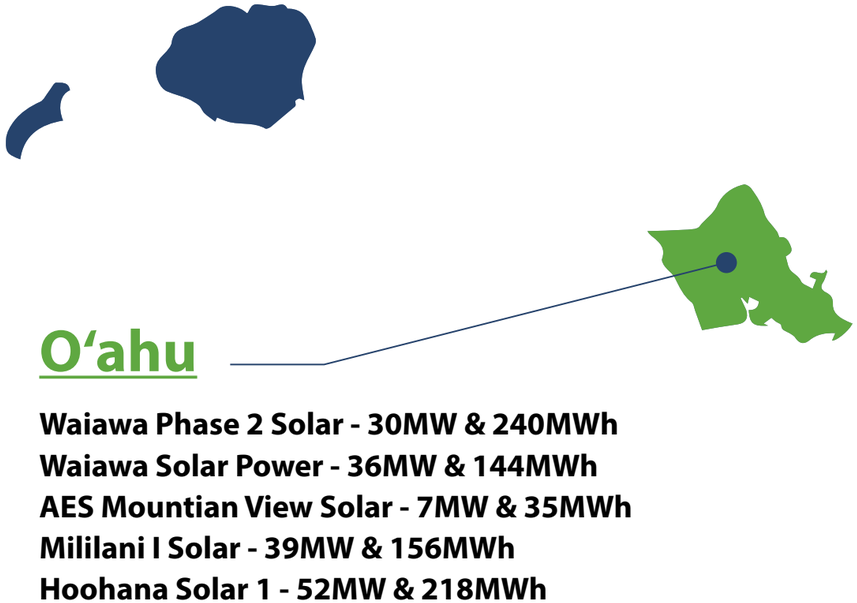
- Permitting process

“We are exploring new ground here — intentionally involving community in the beginning of our project, as a potential model for other developers to follow suit. The results have been exceptionally rewarding. Our project will be shaped by community voice, and it is our hope that we can achieve a project plan that will be deeply appealing to community, to Hawaiian Electric, to the PUC, and still profitable to us, the energy developer. It is an honor to work lockstep with community.”

— Ali, Honolulu

What projects are planned for my community?

Upcoming Energy Projects Statewide



O‘ahu

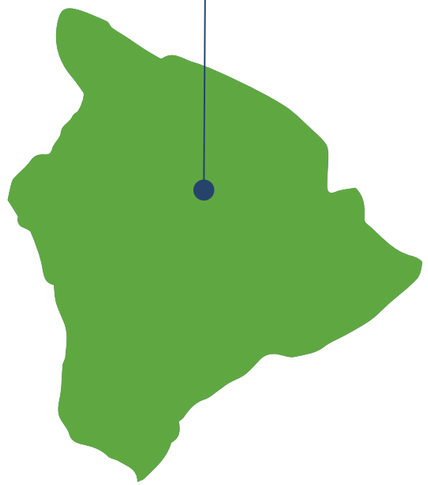
Waiawa Phase 2 Solar - 30MW & 240MWh
Waiawa Solar Power - 36MW & 144MWh
AES Mountian View Solar - 7MW & 35MWh
Mililani I Solar - 39MW & 156MWh
Hoohana Solar 1 - 52MW & 218MWh
AES West Oahu Solar Plus Storage - 12.5MW & 50MWh
Palailai Solar CBRE - 3MW
Kapolei Energy Storage - 185MW & 565MWh
Kalaeloa Home Lands Solar (KHLS) CBRE Phase 1 - 1.72MW
Barbers Point Solar - 15MW & 60MWh
Kupono Solar - 42MW & 168MWh

Maui

Kahana Solar - 20MW & 80MWh
AES Kuihelani Solar - 60MW & 240MWh
Waena Battery Energy Storage System - 40MW & 160MWh
Kamaole Solar - 40MW & 160MWh
Paeahu Solar - 15MW & 60MWh

Hawai‘i Island

Kohala Microgrid- 5MW & 22MWh
Hale Kuawehi Solar - 30MW & 120MWh
AES Waikaloa Solar - 30MW & 120MWh
Keahole Battery Energy Storage - 12MW & 12MWh
Hu Honua Ola Bioenergy Facility - 21.5MW



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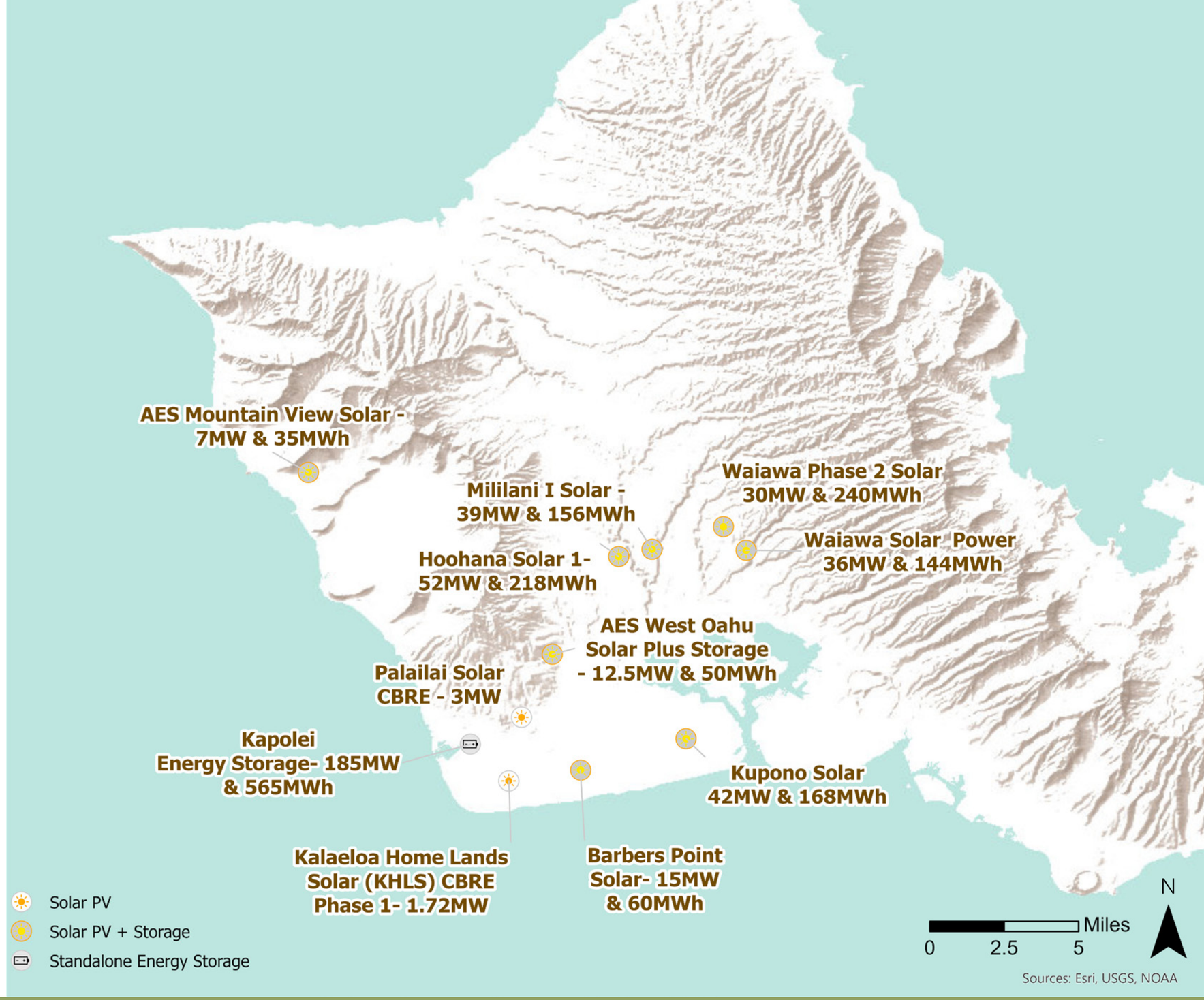
Upcoming Energy Projects O‘ahu



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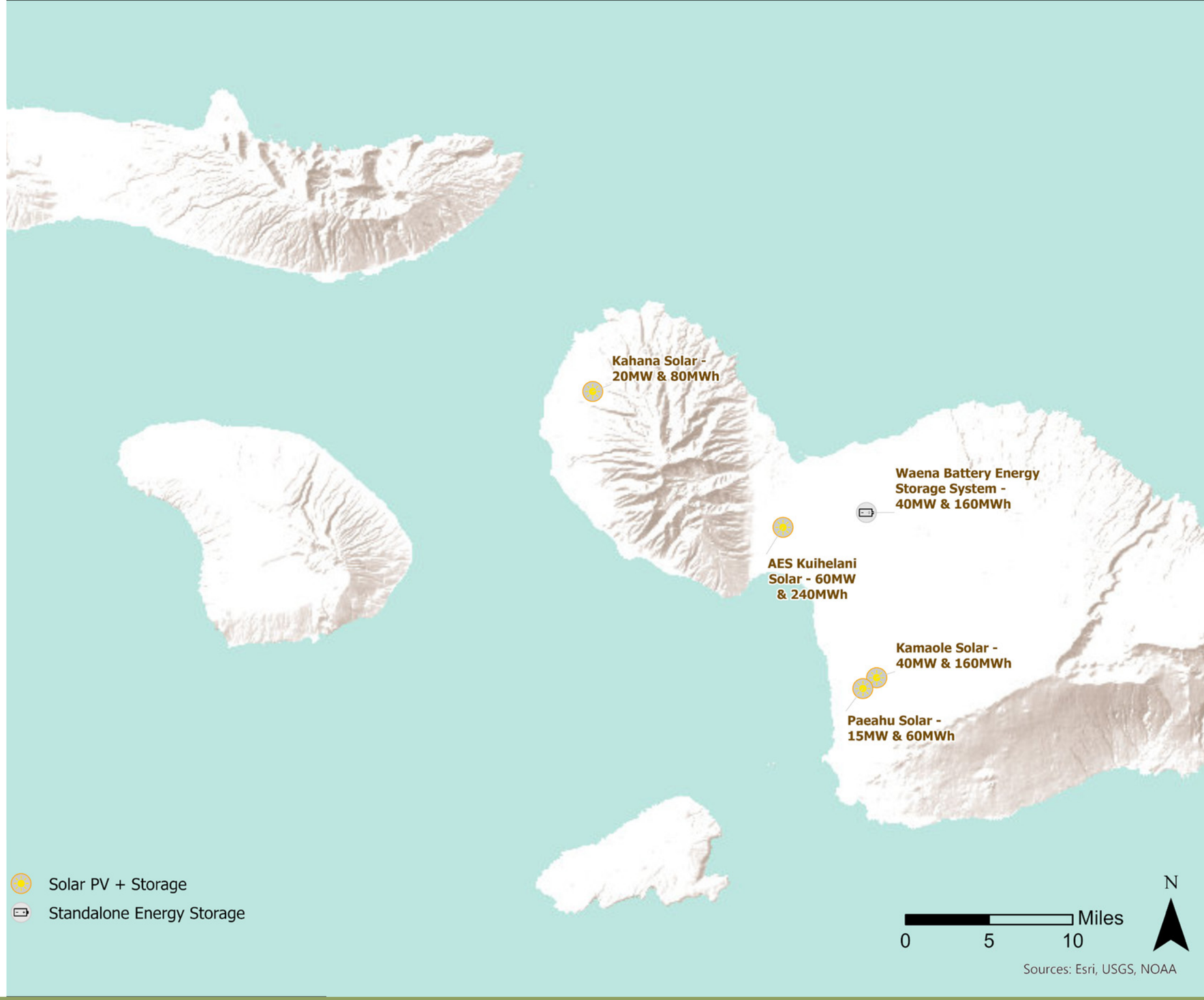
Upcoming Energy Projects Maui Nui



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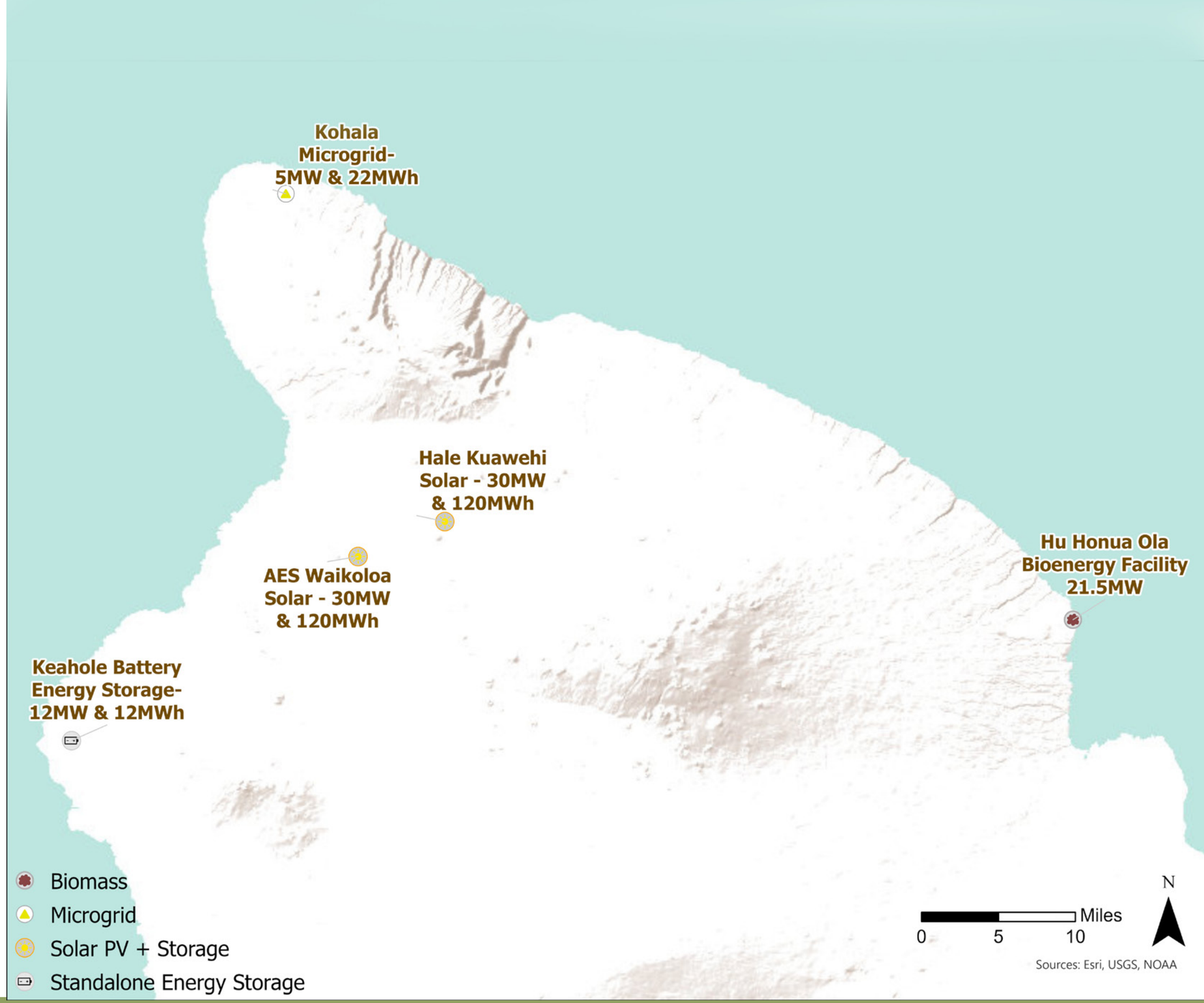
Upcoming Energy Projects Hawai‘i Island



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Upcoming Energy Projects

For project details and status visit

HSEO's online **Energy Project Directory**

“This sunshine that shines on all of us and this promise of renewable energy: it really should be bridging the gap. This should be bringing us closer to helping our friends and neighbors and each and every one of us; giving us access so we can all rise together.”

— Todd, Molokaʻi

Resources

Hawaiian Electric Community Engagement

Hawaiian Electric

@HwnElectric

@hawaiianelectric

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HawaiiStateEnergyOffice

@EnergyHawaiiGov

@energyhawaiigov

(808) 587-3807 | energy.hawaii.gov

Please contact us about anything. Let us know how we can help!

CLEAN ENERGY WAYFINDERS

Kauaʻi

- Peyton Flint: peyton.a.flint.intern@hawaii.gov

West Oʻahu

- Nickie Shintani: nicole.fn.shintani.intern@hawaii.gov
- Malia McDonald: malia.w.mcdonald.intern@hawaii.gov

Koʻolauloa, Oʻahu

- Nick Sinchek: nicholas.kl.sinchek.intern@hawaii.gov

Maui

- Sally Barr: sara.e.barr.intern@hawaii.gov

Molokaʻi

- Kalehua Sproat-Augustiro: beatrice.sproat-augustiro.intern@hawaii.gov

West Hawaiʻi

- Carly Ayukawa: carlene.r.ayukawa.intern@hawaii.gov

East Hawaiʻi

- Cyrene Farrar: michelle.c.farrar.intern@hawaii.gov

Mahalo

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